

order of the articles, the Numbers of 83, 84, 95, 98, 87, 85 and 86, or a total of 618. The total standard Index Number of these commodities in the selected period (1867-77) is $7 \times 100 = 700$, *i.e.* the number of separate articles multiplied by the common term of each. • Hence in 1907 there occurred a fall in the aggregate price of animal food of $(700 - 618 =) 82$ in 700, which is equivalent, by proportion, to a decline of 12 per cent, using the nearer integer; in other words, 618 is 88 per cent of the 700, or a diminution of 12 per cent, where 88 is the aggregate Index Number of the specified group for the year, to be compared with the total standard Index Number of 100 ($-f^2-$) for the same group. The same result is obviously obtained by dividing the sum of the Index Numbers of the articles by the number of articles, or « \cdot » = 88.

The general Index Number of a group of commodities is usually termed the Summary Index Number. In the same mode we can deduce the single Index Number (so as to present a complete conspectus of change) for the entire mass of commodities comprised in the List for any particular year of survey (thus combining together Vegetable and Animal Food, Minerals, Textiles, and Miscellaneous Articles), and then obtaining, by proportion with the standard scale, the *general* variation of aggregated price which has occurred. The individual Index Numbers having been calculated, the sum of the whole of these is furnished for each year by Mr. Sauerbeck in the *Journal of the Statistical Society* and by the *Economist* in its annual Commercial History and Review. The former authority employs the prices of 45 articles, while the *Economist* adopts 47 which are reduced to 22 by combining certain articles of similar nature into one group—thus, 2 descriptions of Sugar are united, 4 kinds of Butchers' Meat constitute a single group, 4 qualities of Raw Cotton are coalesced, and so on. The total standard Index Number of the *Economist* is accordingly $22 \times 100 = 2200$ as the fundamental basis of comparison. Selecting the sum of the several Index Numbers of the "*Economist*", formed from the prices of the 22 commodities on the

1st of July, 1908 (which was 2310, and is termed the " Total Index Number"), we have the proportion, $2200 : 2310 :: 100 : x$, whence $07=105$, or an average general increase, in 1908, of